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Human Capital, Market Imperfections, Poverty, and Migration: Evidence from Rural Albania

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Abstract

During transition, almost a quarter of the Albanian labour force migrated to EU countries. The vast majority migrated illegally and temporarily to work abroad. This paper analyzes the determinants of Albanian migration from rural areas based on a unique representative survey of rural households. The study confirms that those who migrated temporarily are mostly young, male, and single. Regional variations in migration reflect a combination of cultural and economic factors, including migration costs. However, we find that migrants do not come from the poorest rural households. Moreover, education has a positive, albeit non-linear, effect on the likelihood of migration. Migration is negatively related with household access to alternative income sources and reduced financial constraints but positively related with the presence and household's access to migration networks. Policy implications are that aid programs and government initiatives to invest in rural infrastructure and rural education may have mixed effects on migration. A key policy target to reduce migration should be the creation of non-farm rural employment and rural households' access to finance.

Keywords: Albania, migration, rural household
JEL Classification: F22, O52, P20

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1. Introduction

Migration is an important and hotly debated issue in Europe today. Rich countries, in particular those in the EU, try to restrict the inflow of migrants from poor neighbouring countries. Popular sentiment sees migrants as a potential threat to domestic workers' jobs, a drain on government funds, and a source of criminal behaviour. At the same time, some see immigrants as needed to secure future financing of retirement benefits and to fill domestic labour shortages. For poor countries, international migration presents a potentially damaging drain of its most dynamic work force and much needed human capital. However, migration, and the associated remittance payments can also be an important source of income and investment finance for poor households, and therefore of growth.

A dramatic recent example of migration within Europe is the rapid influx of hundreds of thousands of Albanians to its EU neighbours after 1990 (Barjaba 2000). During several decades Albanian citizens were restricted in their foreign travel by a Communist system which, even by East European standards, was excessive in its controls of citizens' life and economic activities. In 1991 the Albanian Parliament approved the law on fundamental human freedoms and rights which specified that "*everybody can go abroad and freely return*", giving Albanian citizens the right of free movement outside the country. A huge number of people seized this opportunity and left for prosperous neighbouring countries like Greece and Italy. The collapse of illegal financial schemes in 1997, and the resulting economic and political chaos, induced further massive migration. In total, more than 700,000 people, about a quarter of the total Albanian workforce, emigrated to the EU in the 1990s. The vast majority

migrated illegally, either by crossing the mountains into Greece, or via smuggler boats to the beaches of Italy (Barjaba and King, 2005).

EU governments have tried to reduce immigration from poor countries by tightening immigration controls and laws, and by introducing programmes targeted at the home countries of the immigrants. Obviously, in order to target these programmes efficiently it is important to understand the motives and characteristics of the (potential) migrants. Yet the policies are often based on weak understandings of the migration patterns and determinants, in particular because much of the migration is illegal, and therefore not registered in traditional statistics or easily accessible data sources. This is a major constraint on policy design.

This paper analyzes the characteristics and determinants of international migration from rural areas in Albania, based on a unique representative survey of rural households. Rural Albania is an interesting area to analyze international migration. At the time of the survey around 60% of the Albanian population lived in rural areas, and poverty was considerably higher in rural than in urban areas (Alam et al., 2005; Macours and Swinnen, 2006). Moreover, characterized by high population density, unemployment, deep poverty, major market imperfections, and lack of infrastructure to attract investment, rural areas in Albania have been characterized by high levels of migration to international destinations since the start of the 1990s (Childress, 2003; INSTAT, 2004; Stanfield, 1999). It is typically argued that many rural residents, and especially the young generation, see no future in the countryside. However, moving to the city requires finding a place to live, which is as difficult as finding a job. Hence, many rural people, in search for better employment opportunities, migrate temporarily or permanently to more prosperous neighbouring countries (Carletto, 2004). In this paper we will study whether these arguments are

supported by empirical evidence, and/or whether they should be qualified – and what this implies for policies. In our analysis, we focus on temporary migration for work purposes which is a very important part of migration from rural Albania (Barjaba, 2000; Nicholson, 2003).

The literature on what determines migration goes back a long way. Early models of migration focused on migration driven by differences in economic opportunities and wages (Hicks, 1932), later adjusted for the probability of obtaining a job at the destination (Harris and Todaro, 1970) and costs of information (Maier, 1985). Other models analyzed migration as an investment, explicitly integrating costs of migration and taking into account differences in returns due to, for example, human capital characteristics of potential migrants (Hart, 1975). Recent studies emphasize the role of household decision-making on migration (Mincer, 1978; Stark, 1991) and explore the conditions under which households choose to send members to other regions (Hoddinott, 1994; de la Briere *et a*l, 2002). Studies find that credit, capital, and insurance market imperfections play a key role in this decision. Migration of household members serves to reduce the overall risk to household income and shocks, or to accumulate capital for consumption and production (Stark, 1991; Taylor and Martin 1999). Finally, networks are found to play an important role in migration. By providing information regarding the modes of migration and job opportunities as well as direct assistance in the form of food or shelter in the destination regions, networks lower the entry costs and reduce uncertainties associated with migration (Davis et al, 2002; Munshi, 2001; Winters et al, 2001). In summary, the literature suggests that migration is determined by a variety of factors, including household and individual characteristics.

The objective of this paper is to study to what extent these factors have affected migration from rural Albania, and to draw implications for policies. The next section presents the data. Section 3 presents the hypotheses, the empirical model and variables. Section 4 discusses the estimation results and section 5 concludes.

2. Data and Descriptive Analysis

Data used for our empirical analysis are based on a representative household survey in rural Albania in 2000. The sampling procedure involved a two stage selection of the rural households. First, 145 communities (villages) were selected from the list of 2900 communities in rural areas, with probability proportional to size. Second, a fixed number of rural households was selected randomly in each community, using standard sampling methods and based on the 1998 census of the Albanian Institute of Statistics (INSTAT). In total, the survey covered 145 villages from all 36 districts of Albania and the data was collected at both household and individual levels. The respondent in each household was the household head, typically the father, who responded on behalf of the other family members (including migrants). In case the household head was not present, another adult member of the household was selected. The initial data set included 4566 individual members of 1232 rural households. After correcting for missing observations, etc., the dataset contained usable information on 3934 individual members of 1171 rural households.

In our analysis, we focus on temporary migration for work purposes as this is a very important form of migration in Albania. Albanian migration is strongly characterized by regular leaving and returning of migrants (see e.g. Barjaba (2000) and Nicholson (2003)). We use two definitions of “migrant”: first an individual household member who spent at least one month abroad during the year 1999 with the

only purpose of working. Second, we use the same definition but for minimum six months working abroad. Based on these definitions, a household that had at least one migrant member is qualified as a "household with migrant(s)".

Two other characteristics of our sample are consistent with our focus on temporary work migration. First, individuals reported as migrants by the households (and thus included as such in our data) were still considered as household members by the household respondents at the time of interview. Individuals that had migrated permanently for some time were often no longer considered "household members" – and, as a result, they are not included in the data. In addition, no information was available (and thus not collected) when the entire family had migrated and no near kin had remained in the area at the time of the survey.

Using these criteria, 402 households in the sample (27.5% of all households in the sample) are households with migrants, and 10.2% of individuals in the sample are migrants of minimum 1 month and 8.5% are migrants of minimum 6 months. The share of migrants in our sample is less than half of that found by the 2001 census in Albania, which was 20.5%. The gap between both numbers probably are permanent migrants and households that migrated entirely which are not included in our sample as explained above.

The main characteristics of the households are summarized in table 1 and for the individuals in table 2.[1] The comparisons of with and without migrants in table 1 and 2 are reported only for the definition of minimum one month migrants since the results are similar for the six month migrant classification. In the individual comparisons (table 3) and the regression analysis (table 5 and 6), the analysis is done for both categories.

[1] All the differences discussed here are statistically significant (see t-tests in table 1).

The average size of the rural household in the sample is 5 members, 3 of whom are of working age (i.e. between 15 and 65 years old). Households without migrants are somewhat larger than households with migrants (5.3 versus 4.9 members on average), have more members at working age (3.6 versus 2.8 on average) and less young children (1.3 versus 1.6).

All households in the sample are active in agriculture. Most have small individual farms that combine crop and animal production to ensure adequate household consumption. A huge share (almost 70%) of the households work only in agriculture. Households with migrants are more likely to be involved only in agriculture (80.5% compared 65.4% to for non-migrant households). They have less wage labour (11.9% versus 22.7%) and less non-farming businesses (9.9% versus 15.8%).

The average household monthly income per capita, excluding transfers from abroad,[2] is 5560.2 LEK or 39.5 US$.[3] Households with migrants have a lower income per capita than those without migrants (5046.8 LEK or 35.8 US$ versus 5735.4 LEK or 40.7 US$), but these numbers should be used with care because they do not include remittances. Remittances are an important source of income for the households with migrants. While we do not have data on the amount of remittances, the survey did ask for "how important remittances were", and for 174 households (14.2 percent of all households of the sample or 54% of households with migrants) remittances was the most important source of income.

[2] Households in the survey reported if they received remittances from migrant members abroad or not. However, they did not report the amount received. Therefore, total income (including remittances) could not be calculated. As a result, per capita household income reported in Table 1 excludes transfers from abroad.

[3] 100 LEK = 0.71 US$ in 1999

The share of households with migrants is higher in the coastal areas of Albania (35%) than the country average (27.5%). This also holds for those living near the borders with Greece (31.5%). Households in the Northern areas have the lowest share of migrant households (20.5%).

Characteristics of individual household members (older than 15 years of age) are summarized in Table 3 (3A for migrants of at least one month; and 3B for migrants of at least 6 months). The differences between migrants and non-migrants are generally much larger at the individual level than at the household level. Compared to non-migrants, migrants (of at least one month) are on average more likely to be male (90 versus 48.7%), single (57.2 versus 25.5%) and younger (29 versus 39 years old). Migrants are more educated than non-migrants. They have more years of schooling and none of the migrants is illiterate.

3. Hypotheses, Model Specification and Variables

Although many studies have modelled migration as a household decision (Stark, 1991), the literature on intra-household decision-making suggests that the assumption of a unitary household decision structure is inappropriate (Haddad *et al*, 1997). Individual human capital and household variables affect individuals' and households' potential income with and without migration (Davis *et al*, 2002). Therefore, the more recent literature suggests that there is a "derived" selectivity on migration on specific individual and household characteristics, through the differential effects of these characteristics in migrant and non-migrants labour markets (Taylor and Martin, 1999).

Our approach follows these insights. We use a logit regression to determine the impact that individual characteristics, household characteristics, regional

conditions and the presence and accessibility of migration networks have on the decision to migrate. More specifically, the model is specified as follows:

$$\ln\left(\frac{\Pr(M_i=1)}{1-\Pr(M_i=1)}\right)=\alpha+P_i^{'}\beta+H_i^{'}\gamma+R_i^{'}\delta+N_i^{'}\theta+\varepsilon_i, \qquad (1)$$

for $i=1,...,3934$, where $\Pr(M_i=1)$ represents the migration probability of individual *i;* P_i denotes a vector of personal characteristics of individual *i;* H_i denotes a vector of individual *i*'s household characteristics; R_i denotes a vector of regional characteristics for individual *i*; N_j denotes the migration network characteristics for individual i; α is the intercept, β, γ, δ and θ are regression coefficients to be estimated and ε_i the disturbance.

The indicator variable for the probability of migration of an individual household member (EMIG) is measured as weather or not an individual went abroad for part or all of 1999. EMIG equals zero if the household member did not emigrate and equals one means if s/he emigrated (see table 4 for statistics on the variables).

Four groups of explanatory variables are considered. The first group consists of household members' personal characteristics. The literature on migration has emphasized the importance of individual human capital. It influences both an individual's employment opportunities and the wages once s/he migrates (Sjaastad, 1962; Chiswick, 1994).

To capture the effect of age, we include the variables AGE and AGESQ (age squared). Migration at younger ages increases the time horizon for expected income calculations (Harris and Todaro, 1970). Moreover, younger people are generally less risk averse and more adventurous, characteristics which are needed to cross the border illegally, like the vast majority of Albanians do. However, for a variety of reasons,

very young (and very old) people may not emigrate, which may result in a non-linear effect of age in the regression.

Education matters as well. Human capital theory suggests that a minimum level of education is required in order to access jobs in high-income countries while higher levels of education increase the employment and expected income-earning opportunities (Schultz, 1982). Relative to the depressed labour market in rural Albania, returns to education are likely to be higher abroad. The implication is that rural Albanians with higher levels of education would be more likely to migrate abroad. However, a certain degree or diploma obtained in Albania may not be recognized in the host country or higher skilled jobs may require a legal status. Second, when lacking legal status, migrants may take jobs which are lower skilled (Djajic, 1995; Markle and Zimmermann, 1992). Therefore the impact of education may well be non-linear.

The indicator variables for education are the continuous variables EDUCATION (measured as individual household member's years of schooling) and EDUCATIONSQ (years of schooling squared). We also make use of two dummy variables: SECOND, which is equal to one if the individual has obtained a secondary school diploma and zero otherwise, and UNIV, equal to one if the individual has obtained a university degree and zero otherwise.

In addition to human capital, gender and marital status are likely to affect the decision to migrate. Our descriptive statistics (see above) are consistent with reports that Albanian migrants are mainly males (INSTAT, 2002). Male domination is still strong, especially in rural Albania (Reinicke, 2002). In the patriarchically organized society, men are responsible for economic and social affairs outside the household while women are educated to be responsible for domestic affairs. As a result, it is

more difficult for women to participate in activities that involve physical separation from the household, including migration. In rural Albania it is also socially less acceptable for women to travel and live alone abroad. To capture the gender effect, the variable MALE equals one if the individual is male and zero otherwise.

To capture marital status, we include the dummy variable SINGLE, equal to one if the individual household member is single and zero otherwise. Family ties and responsibility for children and spouse deter migration, ceteris paribus (Mincer, 1978). Therefore we expect married persons to be less likely to emigrate. Moreover, migration abroad may be especially difficult for persons that have dependent children (i.e. children younger than 15 years of age), because of the duty to care for them. Gedeshi (2001) argues that a husband and father will only migrate if he finds somebody to look after his wife and children. When he cannot entrust his family to the custody of someone else, he is less likely to migrate. To test for the effect of children on migration, the variable CHILDREN is included in the analysis, which equals one if the individual has dependent children and zero otherwise.

A second group of variables captures household characteristics. An important factor is household income. On average, wages are much higher in neighbouring countries (Greece and Italy) than in rural Albania. If differences in (potential) income are an important motive for migration, one would expect that members of poor households are more likely to participate in migration. However, migration abroad involves costs, such as costs of transport, documents, bribes, etc. and members of the poorest households may not be able to afford this. Since these two income-related effects have opposite impacts on migration, we may find a non-linear relationship between income and migration.

The income indicator measures household income per capita and includes earned income (income from self-employment and wages) and non-earned income (income from pensions, state assistance, rents and interest on bank deposits), but excludes remittances. To estimate the income effect we cannot use the household income indicators, which we calculated based on the survey data, directly in the regression model because of endogeneity problems. Instead, we follow the two-step estimation procedure as used by Adams (1993) to construct the predicted per capita household income variable, excluding the remittances effect. First, we regress household income per capita excluding remittances on a set of independent variables with data from the sub-sample of 795 households that did not receive any remittances for the period 1995-1999. In a second step, the estimated parameters from this equation are used to predict household income per capita without remittances for all 1171 rural household of the sample. We then use the natural logarithm of predicted per capita income LXINCOME (and its square term, LXINCOMESQ) in the migration regression model. (More details on this procedure are in Appendix I.)

The variable LIVESTOCK is a proxy for the wealth of the rural household. Using principal components analysis we created an index from the information on the household livestock ownership[4]. To correct for possible changes in 1999 that would be directly correlated to migration (remittances) in this year, we calculate the index based on the livestock at the beginning of 1999.

Apart from the wealth, the estimated coefficient of LIVESTOCK may also reflect credit and insurance market imperfections. Given imperfections in rural factor

[4] The survey collected data on 7 types of animals owned by the households: milking cows, calves, other cattle, pigs, goats, sheep and horses/mules/donkeys. Principal components analysis on the livestock data identified 3 components, explaining 54.9% of the variance. In calculating the livestock index, only the factor score of the first principal component, explaining almost 30% (29.7%) of the variance, was considered. We also ran regressions with a different livestock index, using weights for the various animals. The results are robust to these different specifications.

markets, in particular capital markets (Childress, 2003), livestock may provide a feasible wealth storage instrument for Albanian rural households. At any moment a rural household can sell livestock to secure cash needed to overcome liquidity constraints. Migration is an alternative way of overcoming liquidity constraints – as well as a means to diversify income sources (Stark, 1991). If these constraints play an important role in the decision to migrate, we would expect members of households that have more wealth or that have managed to diversify income sources, e.g. by getting involved in non-farming businesses or wage labour, to be less likely to migrate.

In addition, to capture these effects, we make use of the variable OTHER which serves as an indicator of household's access to off-farm income. It is a dummy variable which equals one if the household was involved in any non-farming activity during 1999, including wage labour, and is zero otherwise.

Regional characteristics may also have an important effect, due to a combination of geographical, cultural, and income factors. First, in addition to the household income level, inequality in income distribution within regions may also affect the decision to migrate. Relative deprivation arguments suggest that migration may be affected by the household's income position vis-à-vis its reference group (e.g. the village) (Stark, 1991). In other words, a household may be more likely to send members abroad if it is poor among rich than if it is poor among poor. To account for this effect, we include the variable GINI which equals the district level Gini coefficient. It measures the degree of inequality in the household income distribution at district level[5]. If relative deprivation plays an important role in the decision to

[5] The smallest administrative unit included in our survey is the village. However, because of having only a few observations per village, we computed the Gini coefficient at district level.

migrate, we would expect that members of households which are located in the districts with a higher Gini coefficient[6] are more likely to migrate.

Second, although poverty is deeply rooted in the north of Albania, historically the area was characterized by a more closed society and lower migration. Natural conditions constrained the penetration of outside influences and the northern "highlanders" have kept a more tribal, traditional culture than in the south or along the coast. To account for these factors, we included a regional dummy, NORTH, equal to one if the household, to which the individual belongs, is located in the north and zero otherwise.

Another regional factor is how the location of the household affects migration costs. The most important destinations of Albanian migrants are Greece and Italy. Migration to Greece mainly happens by crossing the mountains that form the southern frontier between Greece and Albania. Migration to Italy occurs mostly by crossing the Adriatic Sea with smuggling boats departed mainly from Durres and Vlora, the largest ports of Albania (Figure 1). Hence, closeness to the border with Greece or to the sea reduces transport costs and may also affect other migration costs since members of households located in these areas are more likely to be familiar with the mountains or the sea, or have local relatives which can be relied upon for migration services. This effect is captured by two dummy variables: BORDER for whether the household is located in the areas close to the border with Greece and COAST for whether the household is located along the coastal line.

The fourth group of variables are migration network variables. Migration networks may affect migration decisions by providing information regarding the modes of migration and living conditions in the destination, food, shelter, assistance

[6] Note that the Gini coefficient is calculated based on household income excluding transfers from abroad.

in finding work at the destination, or by simply providing finance for migration. As migration networks form and thicken, they may serve as a catalyst for migration of household members that have access to such networks. Two migration network variables are included: PREVIOUS which equals one if a member of the household temporary migrated before 1999, and zero otherwise; and CURRENT which equals one if a member of the household had migrated before 1999 and is currently still abroad.

4. Estimation Results

Table 5 reports the logit estimation results for the dependent variable defined as more than 1 month of migration for work abroad and table 6 for more than 6 months of migration. The various models in each of the tables are different specifications of the model (in particular for some of the individual characteristics) to test the robustness of the results to potential problems of multicollinearity of some of the variables.

In general the estimation results are consistent with the hypotheses – although there are some important exceptions. The various model specifications confirm the robustness of the results. Moreover, the results of table 5 (1-month) and table 6 (6-months) are consistent and yield the same conclusions.

First, the results confirm the importance of several individual characteristics as determinants of migration. The impact of AGE is highly significant, and non-linear: age has an inverted-U shaped relationship with migration. Individuals of around 29 years are most likely to migrate. The likelihood of migration increases with age below 29 years, but over 29, the likelihood of migration reduces when people grow older.[7]

[7] The calculation of the turning point at year 29 is based on model 2.

To test whether correlation between age, education, and marital status affects the results, we dropped EDUCATION, SINGLE and CHILDREN in model 2.[8] As can be seen from comparing model 1 and 2, the estimated coefficients for AGE and AGESQ remain highly significant and are rather robust to the change in specification.

The results show that education also significantly affects migration decisions, and also in a non-linear way. The coefficients of EDUCATION and EDUCATIONSQ have opposite signs. The turning point for education is 12 years of schooling. The likelihood of migration increases with education below 12 years of schooling, but beyond that the likelihood of migration reduces when people have more education.[9] These conclusions are consistent with the results of model 4 where we further analyse the impact of education on migration by replacing the continuous variables EDUCATION and EDUCATIONSQ by dummy variables for secondary education (SECOND) and university education (UNIV). The estimated coefficient of SECOND is positive and significant, but the coefficient of UNIV is not significant suggesting that, *ceteris paribus*, individuals who have secondary education are more likely to emigrate than those with just primary school education, but having a university degree does not significantly raise the migration probability. These findings are consistent with our hypotheses that highly educated persons are not more likely to migrate because (a) such persons are more likely to have better income and employment opportunities in Albania, (b) it is difficult to get recognition for Albanian university degrees in foreign countries, especially when migration is illegal, and (c) that most of the employment opportunities are for lower skilled employment.

[8] For robustness tests we also ran some additional models than the ones included in tables 5 and 6 (eg by including EDUCATION but excluding SINGLE, CHILDREN, or both. The results are consistent with those presented here.

[9] The calculation of the turning point at year 12 is based on model 3.

As expected, the estimations confirm that male and single persons are more likely to migrate. The coefficients of MALE and SINGLE are positive and statistically highly significant. As we argued above the gender bias is due to a combination of cultural and traditional patterns of behaviour in rural society in Albania. Single individuals are more likely to migrate because they have no spouse or children to take care of, and migration costs increase with marriage. Somewhat surprisingly, we find no additional significant effect for having children: the coefficient for the variable CHILDREN is negative but not significant. For those individuals who are married, whether or not they have children does not seem to affect their migration decision. This may reflect the fact that, in any case, women take care of the children and that migrants need to find somebody to look after the family.

Second, the results confirm the importance of several household characteristics as determinants of migration. The effect of income is statistically significant and non-linear: the coefficient of LXPINCOME is positive and LXPINCOMESQ is negative. This implies that migrants are not most likely to come from the poorest households. The likelihood of migration increases with pre-remittance household income levels for low income households. However at higher income levels, the relationship between migration and incomes becomes negative as members of richer households are less likely to migrate. These results are consistent with previous findings in the literature (Adams, 1993) which suggest that individuals from average income rural households are most likely to migrate. The reason is that these households are the ones who are most in need of remittance income among those who are able to meet the transport and opportunity costs associated with migration of household members. The poorest households cannot cover such costs.

We find no effect of livestock ownership as a determinant of migration,[10] but we do find a strong effect of other sources of income on migration. The coefficient of OTHER is negative and significant at the 1% level. Hence, the likelihood of migration reduces if household members are also involved in non-farming business or earn income through wage labour. Access to non-farming income in Albania reduces households' credit constraints and allows them to diversify their sources of income and hence to reduce income risk without participation in migration.

Third, variables that measure the role of regional conditions are also important determinants of migration. Interestingly, the coefficient of GINI is positive and significant. This confirms that the degree of inequality in the distribution of household income within districts is positively related with migration. Hence, (local) income inequality induces migration.

As expected, both COAST and BORDER are positive and statistically significant. Hence, members of households living in areas along the coast and close to the border with Greece are more likely to emigrate. Interestingly, for these variables the coefficients are larger for migrants for more than 1 month (table 5) than for migrants for more than 6 months (table 6), which may suggest that these types of migration costs are more important for short term migrants than for long term migrants. The estimated coefficient of NORTH is not significant: the data indicate that living in the northern areas of Albania has no additional impact on migration, beyond what is captured by other variables.

Finally, after controlling for the first three groups of variables, the estimation results for the indicators of migration networks yield mixed results. We find no effect of previous migration of household members, but a strong effect of current migration

[10] For robustness tests we also ran models to test for a non-linear effect of LIVESTOCK (including the squared term). The results are consistent with those presented here.

of household members. This may imply that households' access to migration networks and the benefits this yields for additional migration is mostly through current members working already abroad.

5. Conclusions and Implications

This paper analyzes the characteristics of temporary migrants from rural Albania based on a representative survey of rural households in Albania in 2000. Our analysis confirms that migrants are mostly young, male, and single. The impact of age is non-linear with the highest propensity to migrate in the age group of around 29 years. Marriage increases mobility costs and constraints. Female migration is much lower than male migration, probably constrained by cultural attitudes against women working outside the family.

The analysis also yields a series of insights which are less straightforward. First, we find that migrants do not come from the poorest rural households suggesting that migration costs are an important constraint. That migration costs are a significant factor is also confirmed by the result that members of households living along the coastal line or in the bordering areas with Greece are more likely to migrate. At higher levels of income – those who can afford the costs of migration – the impact of income on migration turns negative.

Second, an important additional result is that not only absolute income matters but also the distribution of income. Our results show that migration is higher in regions with higher income inequality, ceteris paribus.

Third, education has a positive, albeit non-linear, effect on the likelihood of migration. Migration increases with education and, on average, migrants are more likely to have a high school diploma than those who do not migrate. However, at

higher levels of education, migration is less likely. Those with a university education are less likely to migrate than those with only a secondary education. A higher education offers more opportunities at home, while it does not enhance employment opportunities or wages abroad.

Fourth, migration is negatively related with household access to alternative income sources and reduced financial constraints. Our analysis shows that members of households that have managed to diversify income sources (for example through combining farming and non-farming activities, including wage labour) are less likely to migrate.

These findings have important implications for policies. Our findings suggest that the most important policy target to reduce migration is the creation of non-farm rural employment and access to finance. These factors seem to have a clear negative incentive effect on migration.

Our findings also imply that aid programs and government initiatives to invest in rural infrastructure and rural education may very well have mixed effects on migration. To the extent that they increase human capital, improve access to markets and production factors, and stimulate incentives to invest they will reduce incentives to migrate. Yet at the same time, such investments may lower migration costs, increase the likelihood of finding a job abroad, and by raising the poorest households' incomes increase their ability to finance migration of household members.

To reduce poverty and promote socio-economic development, the Albanian government aims to increase the enrolment rates in education, particularly at the secondary level for children from rural areas – which is also the objective of many government and donor programs in poor countries worldwide. The findings of this paper suggest that an increase in the level of secondary education for the rural

population, when it is not accompanied by an increase in off-farm employment opportunities, may well increase migration rather than constraining it, because it increases the human capital skills but not the local employment opportunities.

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Figure 1: The Geography of Migration from Albania to its Neighbours

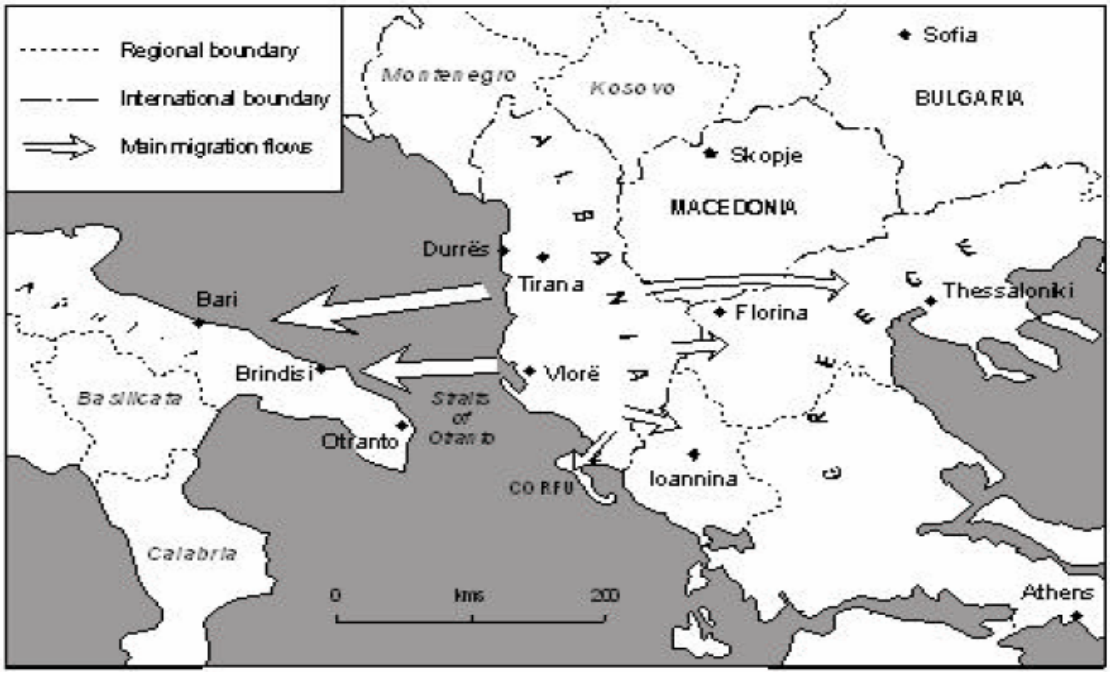

Table 1: Demographic and economic characteristics of the rural households

Characteristic		Households			
		All	With migrants	Without migrants	T – Statistic (Two-tailed)
Age of the household head	(years)	48.7	51.1	47.9	3.64***
Household size	(persons)	5.0	5.3	4.9	2.83***
Number of adults at working age	(persons)	3.0	3.6	2.8	8.76***
Number of children (<15 years old)	(persons)	1.5	1.3	1.6	-3.87***
Households involved only in farming	(%)	69.3	80.5	65.4	4.95***
Households involved in wage labour	(%)	19.9	11.9	22.7	-4.06***
Households involved in non-farm businesses	(%)	14.3	9.9	15.8	-2.50**
Per capita household monthly income[1]	(in LEK[2])	5560.2	5046.8	5735.4	-2.27**
Number of observations	(persons)	1171	322	849	

Notes to Table 1

[1]/ excluding transfers from abroad

[2]/ LEK is Albanian currency and 100LEK = US $0.71 in 1999

*** denotes statistical significance at 1% level, ** denotes statistical significance at 5% level

Table 2: Exposure of households to migration by location

Households	Location								Total	
	North		Border		Coast		Central			
	Nr.	%	Nr.	%	Nr.	%	Nr.	%	Nr.	%
With migrants	35	**20.5**	46	**31.5**	134	**34.8**	107	**22.7**	322	**27.5**
Without migrants	136	79.5	100	68.5	250	65.2	363	77.3	849	72.5
Total	171	100.0	146	100.0	384	100.0	470	100.0	1171	100.0

Table 3: Personal characteristics of household members

A. Migrant = at least one month abroad

Characteristic			All individuals	Migrants	Non-migrants	T – Statistic (Two-tailed)	
Kinship							
Household head	(%)		28.9	22.6	29.7	-1.39	
Son of household head	(%)		22.2	63.2	17.5	24.71	***
Of which:							
unmarried sons	(%)		81.6	83.9	80.6	1.62	
Sex (male = 1)	(%)		52.9	90.0	48.7	12.73	***
Marital status							
Single	(%)		28.8	57.2	25.5	16.85	***
Married	(%)		65.3	35.8	68.8	-17.33	***
Of which: married with young children	(%)		36.7	19.9	38.6	-4.82	***
Age	(years)		38.1	29.2	39.1	-11.27	***
Of which: 15 – 19	(%)		12.4	7.6	12.9	-3.78	***
20 – 34	(%)		33.4	67.3	29.3	16.28	***
35 – 49	(%)		27.6	20.3	30.9	-7.08	***
50 – 64	(%)		17.6	4.1	21.0	-7.37	***
65 +	(%)		9.0	0.6	11.2	-4.77	***
Education	(years of schooling)		8.4	10.0	8.3	12.48	***
Of which: Illiterate	(%)		1.0	0.0	1.2	-1.92	*
1 to 8 years	(%)		68.0	47.8	68.2	-7.91	***
9 to 12 years	(%)		29.1	47.7	28.0	9.36	***
More than 12 years	(%)		2.9	4.5	2.7	2.38	***
Location							
North	(%)		13.5	9.5	13.9	-1.61	
Border	(%)		11.9	15.4	11.6	2.44	**
Coast	(%)		33.2	45.5	31.8	7.09	***
Central	(%)		41.4	29.6	42.7	-6.81	***
Number of observations			3934	402	3532		

Table 3: Personal characteristics of household members (cont.)

B. Migrant = at least 6 months abroad

Characteristic		All individuals	Migrants	Non-migrants	T – Statistic (Two-tailed)	
Kinship						
Household head	(%)	28.9	24.6	29.4	-1.77	*
Son of household head	(%)	22.2	63.0	18.3	27.17	***
Of which:						
unmarried sons	(%)	81.6	83.7	80.9	1.78	*
Sex (male = 1)	(%)	52.9	90.6	49.3	11.61	***
Marital status						
Single	(%)	28.8	56.0	26.2	15.64	***
Married	(%)	65.3	37.8	67.7	-15.67	***
Of which: married with young children	(%)	36.7	21.1	38.1	-5.71	***
Age	(years)	38.1	29.6	39.9	-10.16	***
Of which: 15 – 19	(%)	12.4	7.1	13.2	-2.28	***
20 – 34	(%)	33.4	69.5	29.2	15.83	***
35 – 49	(%)	27.6	20.2	28.6	-6.71	***
50 – 64	(%)	17.6	2.9	19.2	-6.70	***
65 +	(%)	9.0	0.3	9.8	-4.81	***
Education	(years of schooling)	8.4	10.0	8.3	12.17	***
Of which: Illiterate	(%)	1.0	0.0	1.1	-1.95	*
1 to 8 years	(%)	68.0	55.1	69.1	-9.14	***
9 to 12 years	(%)	29.1	50.4	27.1	9.89	***
More than 12 years	(%)	2.9	4.7	2.7	2.31	***
Location						
North	(%)	13.5	9.1	14.0	-1.22	
Border	(%)	11.9	15.3	11.7	2.56	**
Coast	(%)	33.2	46.6	31.9	6.48	***
Central	(%)	41.4	30.0	42.4	-6.74	***
Number of observations		3934	341	3593		

Table 4: Descriptive statistics of migration equations variables

Variable	Definition	Mean (Std. Dev.)
EMIG	= 1 if individual emigrates; = 0 otherwise	0.1022
	Personal Characteristics	
AGE	Age of the individual in years	38.1261 (15.7821)
AGESQ	Age squared	1702.61 (1326.974)
EDUCATION	Years of individual's education	8.4347 (3.0259)
EDUCATIONSQ	Years of education squared	80.3448 (52.2660)
SECOND	= 1 if individual has obtained a secondary school' s diploma; = 0 otherwise	0.2908
UNIV	= 1 if individual has obtained a university degree; = 0 otherwise	0.02978
MALE	= 1 if individual is male; = 0 otherwise	0.5292
SINGLE	= 1 if individual is single; = 0 otherwise	0.2877
CHILDREN	= 1 if individual is married and has dependent children; = 0 otherwise	0.3665
	Household Characteristics	
LXPINCOME	Natural logarithm of predicted per capita household monthly income	8.3984 (0.5869)
LXPINCOMESQ	Natural logarithm of predicted per capita household monthly income	70.8682 (9.7155)
LIVESTOCK	Livestock index	0.1371 (1.0122)
OTHER	=1 if household, besides farming, is involved in non-farming activities, including labour wage; = 0 otherwise	0.3182
	Regional characteristics	
NORTH	= 1 if household is located in the north of Albania; = 0 otherwise	0.1355
BORDER	= 1 if household is located close to the border with Greece; = 0 otherwise	0.1199
COAST	= 1 if household is located along the coastal line; = 0 otherwise	0.3319
GINI	= Gini coefficient of district *k* for *k = 1, 2, …, 36*	0.3299 (0.0774)
	Migration Networks	
PREVIOUS	=1 if individual is member of a household, members of which participated in temporary migration prior to 1999; = 0 otherwise	0.1380
CURRENT	= 1 if individual is member of a household with current migrant members that migrated prior to 1999; = 0 otherwise	0.0246

Note to Table 4

Statistics for the above variables is based on 3934 observations

Table 5: Logit estimation results (Dep. variable: Migration ≥ 1 month)

Variable	Model 1		Model 2		Model 3		Model 4	
	Coeff.		Coeff.		Coeff.		Coeff.	
Personal Characteristics								
AGE	0.4506 (9.12)	***	0.3854 (8.79)	***	…	…	0.4572 (9.38)	***
AGESQ	-0.0069 (-9.91)	***	-0.0065 (-9.77)	***	…	…	-0.0071 (-10.22)	***
EDUCATION	0.3996 (2.43)	**	…	…	0.8386 (4.78)	***	…	…
EDUCATIONSQ	-0.0175 (-2.11)	**	…	…	-0.0342 (-3.87)	***	…	…
SECOND	…	…	…	…	…	…	0.2444 (2.04)	**
UNIV	…	…	…	…	…	…	0.2084 (0.53)	
MALE	2.6717 (12.67)	***	2.6901 (12.47)	***	2.4768 (12.64)	***	2.6651 (12.60)	***
SINGLE	0.8136 (3.67)	***	…	…	0.9505 (6.61)	***	0.8108 (3.67)	***
CHILDREN	-0.2393 (-1.16)		…	…	-0.2682 (-1.39)		-0.2073 (-1.00)	
Household Characteristics								
LXPINCOME	5.5841 (2.07)	**	5.9012 (2..20)	**	5.9611 (2.27)	**	6.4039 (2.37)	**
LXPINCOMESQ	-0.3289 (-2.01)	**	-0.3367 (-2.08)	**	-0.3712 (-2.34)	**	-0.3752 (-2.30)	**
LIVESTOCK	-0.0301 (-0.36)		-0.0430 (-0.52)		-0.0330 (-0.41)	**	-0.0276 (-0.33)	
OTHER	-0.9156 (-5.54)	***	0.9082 (-5.55)	***			-0.9174 (-5.55)	***
Regional Characteristics								
NORTH	-0.1178 (-0.53)		-0.1221 (-0.56)		-0.0276 (-0.13)		-0.1612 (-0.73)	
BORDER	0.6620 (3.13)	***	0.6420 (3.07)	***	0.5651 (2.86)	***	0.6719 (3.16)	***
COAST	0.5521 (3.19)	***	0.5577 (3.26)	***	0.5125 (3.15)	***	0.5708 (3.30)	***
GINI	2.5705 (2.82)	***	2.5554 (2.85)	***	2.4552 (2.92)	***	2.5272 (2.77)	***
Migration Networks								
PREVIOUS	0.0167 (0.11)		0.0212 (0.14)		0.1083 (0.76)		0.0228 (0.15)	
CURRENT	1.4392 (13.65)	***	1.5282 (13.84)	***	1.1268 (12.67)	***	1.4649 (13.89)	***
Constant	-37.9238 (-3.38)	***	-36.1372 (-3.23)	***	-34.0205 (-3.11)	***	-39.5969 -3.52	***
Nr. of observations	3934		3934		3934		3934	
LR chi2	1019.21		991.58		820.04		1011.45	
Prob>chi2	0.0000		0.000		0.000		0.000	
Log-likelihood	788.0659		-801.8812		887.6469		-791.9444	
Pseudo R2	0.3927		0.3821		0.3160		0.3897	

Notes:

1) *** denotes statistical significance at 1% level, ** denotes statistical significance at 5% level, * denotes statistical significance at 10% level
2) Numbers in parenthesis are standard z-values

Table 6: Logit estimation results (Dep. variable: Migration ≥ 6 months)

Variable	Model 1		Model 2		Model 3		Model 4	
	Coeff.		Coeff.		Coeff.		Coeff.	
Personal Characteristics								
AGE	0.4344 (8.17)	***	0.3872 (8.33)	***	…	…	0.4428 (8.44)	***
AGESQ	-0.0067 (-9.00)	***	-0.0064 (-9.21)	***	…	…	-0.0069 (-9.34)	***
EDUCATION	0.4802 (2.36)	**	…	…	0.9801 (4.75)	***		
EDUCATIONSQ	-0.0209 (-2.09)	**	…	…	-0.0405 (-3.95)	***		
SECOND	…	…	…	…	…	…	0.3483 (2.31)	**
UNIV	…	…	…	…	…	…	0.0761 (0.18)	
MALE	2.7609 (11.47)	***	2.9064 12.42	***	2.5484 (11.38)	***	2.7502 (11.38)	***
SINGLE	0.6841 (2.84)	***	…	…	0.8585 (5.46)	***	0.6844 (2.85)	***
CHILDREN	-0.0634 (-0.29)		…	…	-0.0716 (-0.35)	…	-0.0327 (-0.15)	
Household Characteristics								
LXPINCOME	7.85108 (2.55)	**	8.2291 (2.72	***	8.1992 (2.74)	***	8.8040 (2.86)	***
LXPINCOMESQ	-0.4514 (-2.44)	**	-0.4628 (-2.54)	**	-0.4931 (-2.73)	***	-0.5064 (-2.74)	***
LIVESTOCK	-0.0796 (-0.87)		-0.1019 (-1.13)		-0.0108 (-0.12)		-0.0742 (-0.81)	
OTHER	-0.6793 (-3.90)	***	-0.6829 (-3.94)	***	-0.5943 (-3.57)	***	-0.6835 (-3.93)	***
Regional Characteristics								
NORTH	-0.3093 (-1.38)		-0.2808 (-1.23)		-0.2121 (-0.92)		-0.2165 (-0.99)	
BORDER	0.4812 (2.12)	**	0.4664 (2.06)	**	0.4428 (2.08)	**	0.4760 (2.08)	**
COAST	0.3211 (1.73)	*	0.3343 (1.81)	*	0.3227 (1.84)	*	0.3350 (1.80)	*
GINI	2.1792 (2.21)	**	2.1834 (2.25)	**	2.1312 (2.35)	**	2.1081 (2.14)	**
Migration Networks								
PREVIOUS	0.0391 (0.25)		0.0228 (0.15)		0.124 (0.83)		0.0478 (0.31)	
CURRENT	1.6771 (14.86)	***	1.7542 (15.69)	***	1.3600 (14.20)	***	1.7067 (15.07)	***
Constant	-48.7332 (-3.79)	***	-47.2186 (-3.73)	***	-45.1977 (-3.61)	***	-50.5257 (-3.93)	***
Nr. of observations	3934		3934		3934		3934	
LR chi2	937.09		917.15		775.25		931.61	
Prob>chi2	0.0000		0.0000		0.0000		0.0000	
Log-likelihood	-691.1534		-701.1231		772.0745		-693.8927	
Pseudo R2	0.4040				0.3342		0.4017	

Notes:

1) *** denotes statistical significance at 1% level, ** denotes statistical significance at 5% level, * denotes statistical significance at 10% level
2) T-statistics are in parentheses

Appendix

The income indicator measures household income per capita and includes earned income (income from self-employment and wages) and non-earned income (income from pensions, state assistance, rents and interest on bank deposits), but excludes remittances. To estimate the income effect we cannot use the household income indicators, which we calculated based on the survey data, directly in the regression model because of endogeneity problems. Instead, we follow the two-step estimation procedure as used by Adams (1993) to construct the predicted per capita household income variable, excluding the remittances effect. First, we regress household income per capita excluding remittances on a set of independent variables with data from the sub-sample of 795 households that did not receive any remittances for the period 1995-1999. In a second step, the estimated parameters from this equation are used to predict household income per capita without remittances for all 1171 rural household of the sample. We then use the natural logarithm of predicted per capita income LXINCOME (and its square term, LXINCOMESQ) in the migration regression model.

More specifically, the two-step procedure can be specified as:

$$income\ regression: \quad LXPINCOME_k = H_k'\eta + u_k, \qquad k = 1,2,...795 \qquad (A.1)$$

$$predicted\ income: \quad LXPINCOME_j = H_j'\hat{\eta} \qquad j = 1,2,...1171 \qquad (A.2)$$

where H_k' stands for the set of characteristics that determine per capita income of the household *k*, that did not receive remittances from member(s) or relatives abroad during the period 1995-1999, η is the vector of coefficients to be estimated, u_k the error term (randomly distributed among the subsample), $\hat{\eta}$ is the vector of estimated coefficients and $LXPINCOME_j$ is predicted income per capita, excluding remittances

(in logarithms). Descriptions and summary statistics on the variables included in vector $H_k^{'}$ are given in Table A.1. The parameter results obtained from using equation A1 are summarised in Table A2.

Table A1: Descriptive statistics of variables used in income regression

Variable	Definition	Mean (Std. Dev.)
LXINCOME	Natural logarithm of per capita household monthly income	8.4504 (0.8058)
AGEHH	Age of household head in years	48.1441 (12.9628)
EDUCATION	Mean education of household members older then 15 years	8.5726 (2.5371)
FAMSIZE	Household size	4.9802 (2.0404)
ADULTS	Household members in working age as proportion of household size	0.6151 (0.2626)
LLAND	Natural logarithm of land cultivated by the household	1.8347 (0.9494)
LIVESTOKM	Livestock index	0.0263 (0.9603)
MACHINERY	Farm machinery index	0.0262 (1.0438)
BUILDING	Farm buildings index	0.3079 (1.0247)
NONFARM	= 1 if household, besides farming, is involved in non-farming private businesses; = 0 otherwise	0.1834
WAGE	= 1 if household, besides farming, is involved in labour wage; = 0 otherwise	0.2465
STATE	= 1 if the household receives income from state pensions or state assistance; =0 otherwise	0.5204

Notes

1) Statistics for the above variables is based on 795 observations
2) Livestock index is measured on the availability of 7 types of animals in the rural households: milking cows, calves, other cattle, pigs, goats, sheep and horses/mules/donkeys
3) Farm machinery index is measured on the availability of eight machinery and equipment items: tractors, trucks, ploughs, sowing machines, mower, harrow, cultivator, irrigation equipment
4) Farm building index is measured on the availability of seven building items: cattle stables, storage facilities, sheep shelter, poultry houses, multipurpose sheds, greenhouses and plastic covers
5) Principal component analysis is used to construct the indexes mentioned above

Table A2: Estimation of per capita household income

Variable	Coeff.	t-Statistic	
AGEHH	0.0044	2.40	**
EDUCATION	0.0316	3.48	***
FAMSIZE	-0.1607	-13.38	***
ADULTS	0.1337	1.48	
LLAND	0.3642	13.25	***
LIVESTOCK	0.2287	8.97	***
MACHINERY	0.0234	1.17	
BULDING	0.0217	1.02	
NONFARM	0.1519	2.69	***
WAGE	0.4783	9.40	***
STATE	0.0431	0.90	
Constant	7.8245	4.5.04	***
Number of observations			795
Prob>F			0.000
R-squared			0.4832
Adj. R-squared			0.4760

Notes

1) Dependent variable is LXINCOME, the natural logarithm of per capita household income
2) *** denotes statistical significance at 1% level, ** denotes statistical significance at 5% level
3) Obtained parameters are used to estimate predicted per capita income (excluding transfers from abroad) for all the households